FLUKE 8026B Operator Guide

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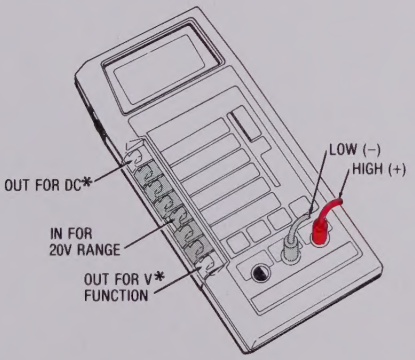
P/N 646422 June 1982

WARNING

REMOVE INPUT SIGNAL AND TEST LEADS FROM 8026B INPUT TERMINALS BEFORE OPENING THE BATTERY COMPARTMENT OR OTHERWISE ACCESSING OR TOUCHING THE FUSE AND/OR BATTERY. DO NOT OPERATE THE INSTRUMENT UNLESS BATTERY COVER IS IN PLACE AND FULLY CLOSED.

DC VOLTAGE (DC V)

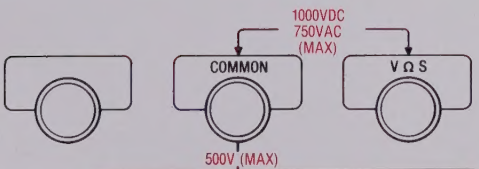


**NOTE: The function switches are push-push type. Do not pull them to the out position.*

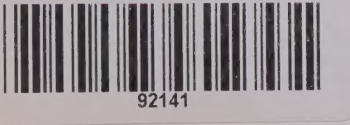
- Connect the test leads as shown above.
- Depress the switch beside the desired range (20V is shown selected).
- Ensure that all other switches are at the out position.

WARNING

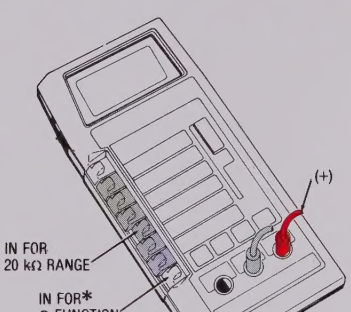
TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, OBSERVE THE FOLLOWING MAXIMUM LIMITS WHEN MEASURING DC VOLTAGE:



- Connect the
- Read the
automatically
with respect
RESISTANCE



RESISTANCE (Ω)

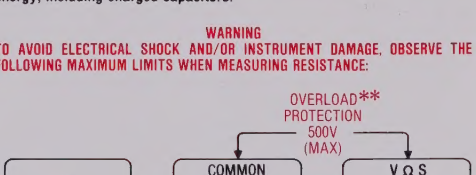


NOTE: The function switches are push-push type. Do not pull them to the out position.

- Connect the test leads as shown above.
- Depress the mA-V-Ω-S switch to select the Ω function.
- Depress the switch beside the range desired (20 kΩ is shown selected).
- Ensure that all other switches are at the out position.
- Verify that the device or circuit being measured contains no electrical energy, including charged capacitors.

WARNING

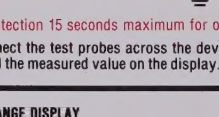
TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, OBSERVE THE FOLLOWING MAXIMUM LIMITS WHEN MEASURING RESISTANCE:

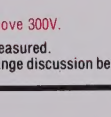


**Protection 15 seconds maximum for overloads above 300V.

- Connect the test probes across the device being measured.
- Read the measured value on the display. (See overrange discussion below.)

OVERRANGE DISPLAY





If the value of the parameter being measured exceeds the range selected, a "1", as shown above, is displayed as an overrange indicator. Select the next higher range until an in-range reading is displayed.

CONTINUITY TESTING

(Use for passive circuit testing)

- Select the Ω function, 2 kΩ range.
- Depress the AC/DC switch to enable the audio tone.
- Ensure that the device being measured contains no electrical energy.

WARNING

TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, COMPLY WITH THE WARNING FOR THE RESISTANCE (Ω) FUNCTION.

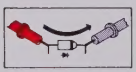
NOTE: Protection 15 seconds maximum for overloads above 300V.

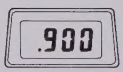
- Connect the test probes to the circuit being measured.
- Momentary continuity between the test leads (<110Ω approx.) will cause the audible tone to sound.

DIODE TEST (→|)

2 kΩ, 200 kΩ, and 20 MΩ ranges will turn on P-N junction diodes.

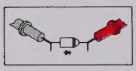
- Select the Ω function, 2 kΩ range and comply with the warning.
- Connect the test probes to forward bias the diode as shown below:

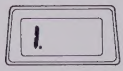




Typical reading for forward biased silicon diode.

- Reverse the test probes to back bias the diode as shown below:





Overrange will be displayed provided that any resistance in parallel with diode is >2 kΩ.

IN-CIRCUIT RESISTANCE MEASUREMENTS

The 200Ω, 20 kΩ, 2000 kΩ ranges can be used to measure resistance values connected in parallel with silicon diodes.

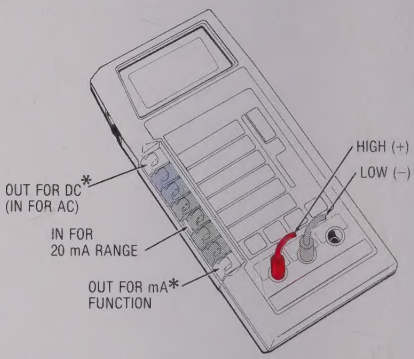
On these ranges the test voltage is less than the voltage required to turn on a normal silicon diode.

SERVICE

U.S.A. (except AK, HI, WA): 800-426-0361
AK, HI, WA, Canada: 206-356-5400

International Locations: Refer to your Instruction Manual.

CURRENT (mA)

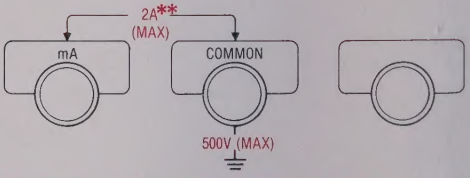


**NOTE: The function switches are push-push type. Do not pull them to the out position.*

- Connect the test leads as shown.
- Depress the switch beside the range desired (20 mA range is shown selected).
- Set the AC/DC switch out for DC or in for AC (DC shown selected).
- Ensure that all other switches are at the out positions.

WARNING

TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, OBSERVE THE FOLLOWING MAXIMUM LIMITS WHEN MEASURING CURRENT.



***Protected by 2A/250V fuse and 3A/600V backup fuse.*

- Connect the test probes to the circuit being measured.
- Read the measured value on the display. In DC, the minus sign will appear if the mA terminal is negative with respect to the COMMON terminal. (See over-range discussion on RESISTANCE page.)
- If unit fails to read properly see fuse check below.

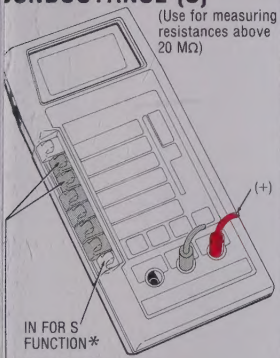
FUSE CHECK

The current (mA) function contains two fuses. Check them as follows:

- Select the RESISTANCE (Ω) function and 2 kΩ range.
- Touch the red test probe to the mA input jack so that the V-Ω-S input and mA input are connected together.
- If the display reads approximately .100 kΩ, both fuses are good.
- If the display reads overrange, one or both fuses need replacement. See facing page for replacement instructions.

CONDUCTANCE (S)

(Use for measuring resistances above 20 MΩ)



* *NOTE: The function switches are push-push type. Do not pull them to the out position.*

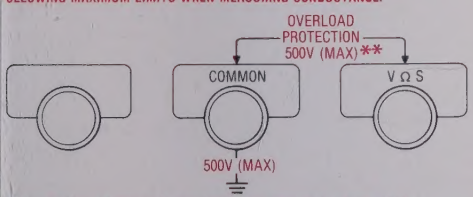
CONDUCTANCE-TO-RESISTANCE CONVERSION

2 mS Range (1/mS = kΩ)		200 nS Range (1000/nS = MΩ)	
mS	kΩ	nS	MΩ
2.0	.5	200	5
1.0	1	100	10
0.5	2	50	20
0.2	5	20	50
0.1	10	10	100
0.05	20	5	200
0.02	50	2	500
0.01	100	1	1000
0.005	200	0.5	2000
0.002	500	0.2	5000
0.001	1000	0.1	10000

- Connect the test leads as shown.
- Depress the mA-Ω-S function switch.
- AT THE SAME TIME, depress both of the range switches beside the desired range (The 200 nS range is shown selected.)
- Ensure that all other switches are at the out positions.
- Ensure that the device being measured contains no electrical energy including charged capacitors.

WARNING

TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, OBSERVE THE FOLLOWING MAXIMUM LIMITS WHEN MEASURING CONDUCTANCE:



***Protection 15 seconds maximum for overloads above 300V.*

- Connect the test probes across the device being measured.
- Conductance is displayed in Siemens which equals 1/Ω. Use the conversion scales above to determine the equivalent resistance.

BATTERY/FUSE TYPES

MAIN FUSE: 2A/250V Type AGX2 (inside battery compartment).

BACKUP FUSE: 3A/600V Type BBS-3 (inside instrument case).

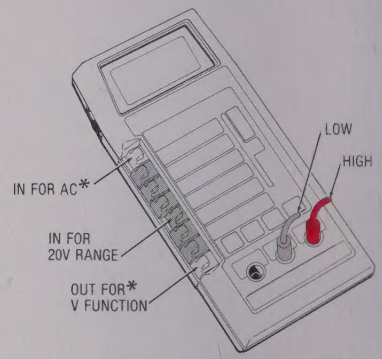
Caution

Replacement of backup fuse by qualified personnel only. See instruction manual.

BATTERY: 9V carbon-zinc or alkaline NEDA Type #1604.

BT appears in display when approximately 20% of battery life remains.

AC VOLTAGE (AC V)

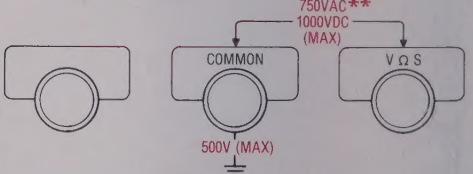


**NOTE: The function switches are push-push type. Do not pull them to the out position.*

- Connect the test leads as shown above.
- Depress the AC/DC switch to select the AC function.
- Depress the switch beside the desired range (20V is shown selected).
- Ensure that all other switches are at the out position.

WARNING

TO AVOID ELECTRICAL SHOCK AND/OR INSTRUMENT DAMAGE, OBSERVE THE FOLLOWING MAXIMUM LIMITS WHEN MEASURING AC VOLTAGE.



***Protection on 200 mV range allows 15 sec max for overload above 300V.*

- Connect the test probes to the circuit being measured.
- Read the measured value on the display. (See overrange discussion on RESISTANCE page.)

dBm TO VOLTAGE CONVERSION (600Ω)

dBm	V	dBm	V	dBm	mV	dBm	mV	dBm	mV
+5	1.377	−5	.436	−12	194.6	−22	61.5	−32	19.5
+4	1.228	−6	.388	−13	173.4	−23	54.8	−33	17.3
+3	1.094	−7	.346	−14	154.6	−24	48.9	−34	15.5
+2	.975	−8	.308	−15	137.7	−25	43.6	−35	13.8
+1	.869	−9	.275	−16	122.8	−26	38.8	−36	12.3
0	.775	−10	.245	−17	109.4	−27	34.6	−37	10.9
−1	.690	−11	.218	−18	97.5	−28	30.8	−38	9.8
−2	.615			−19	86.9	−29	27.5	−39	8.7
−3	.548			−20	77.5	−30	24.5	−40	7.7
−4	.489			−21	69.0	−31	21.8	−42	6.2